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PETITION FEE
Under 37 CFR 1.17(f), (g) & (h)
TRANSMITTAL
(Fees are subject to annual revision)

Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

Application Number	10/807,202
Filing Date	March 24, 2004
First Named Inventor	Makoto AOKI
Art Unit	2113
Examiner Name	R. Beausoliel, Jr.
Attorney Docket Number	1213.43684X00

Enclosed is a petition filed under 37 CFR 1.102(d) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of $ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

Payment of Fees (small entity amounts are NOT available for the petition (fees)

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☐ petition fee under 37 CFR 1.17(f), (g) or (h) ☒ any deficiency of fees and credit of any overpayments
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Petition Fees under 37 CFR 1.17(f): **Fee $400** **Fee Code 1462**
For petitions filed under:
§ 1.53(e) - to accord a filing date.
§ 1.57(a) - to according a filing date.
§ 1.182 – for decision on a question not specifically provided for.
§ 1.183 – to suspend the rules.
§ 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
§ 1.741(b) – to accord a filing date to an application under §1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g): **Fee $200** **Fee code 1463**
For petitions filed under:
§1.12 - for access to an assignment record.
§1.14 - for access to an application.
§1.47 - for filing by other than all the inventors or a person not the inventor.
§1.59 - for expungement of information.
§1.103(a) - to suspend action in an application.
§1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
§1.295 - for review of refusal to publish a statutory invention registration.
§1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
§1.377 – for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
§1.550(c) – for patent owner requests for extension of time in ex parte reexamination proceedings.
§1.956 – for patent owner requests for extension of time in inter partes reexamination proceedings.
§ 5.12 – for expedited handling of a foreign filing license.
§ 5.15 – for changing the scope of a license.
§ 5.25 – for retroactive license.

Petition Fees under 37 CFR 1.17(h): **Fee $130** **Fee Code 1464**
For petitions filed under:
§1.19(g) – to request documents in a form other than that provided in this part.
§1.84 – for accepting color drawings or photographs.
§1.91 – for entry of a model or exhibit.
§1.102(d) – to make an application special.
§1.138(c) – to expressly abandon an application to avoid publication.
§1.313 – to withdraw an application from issue.
§1.314 – to defer issuance of a patent.

Name (Print/Type)	**Frederick D. Bailey**	*Registration No. (Attorney/Agent)*	**42,282**
Signature		*Date*	July 13, 2005

1213.43684X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Makoto AOKI

Serial No.: 10/807,202

Filed: March 24, 2004

For: INFORMATION PROCESSING SYSTEM AND METHOD

PETITION TO MAKE SPECIAL
UNDER 37 CFR §1.102(MPEP §708.02)

MS Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

July 13, 2005

Sir:

Applicants hereby petition the Commissioner to make the above-identified application special in accordance with 37 CFR §1.102(d). Pursuant to MPEP §708.02(VIII), Applicants state the following.

(A) This Petition is accompanied by the fee set forth in 37 CFR §1.17(h).

The Commissioner is hereby authorized to charge any additional payment due, or to credit any overpayment, to Deposit Account No. 50-1417.

(B) All claims are directed to a single invention.

If the Office determines that all claims are not directed to a single invention, Applicant will make an election without traverse as a prerequisite to the grant of special status in conformity with established telephone restriction practice.

(C) A pre-examination search has been conducted.

The search was directed towards a storage system. In particular, the search was directed towards the invention set forth in claims 1-22. The invention is directed to, at a minimum, an information processing system having a storage having a logical unit logically assigned to a physical device, and a plurality of information processing apparatuses which are selectively connected to said storage and request data input/output from said storage, said information processing system requesting data input/output via a plurality of paths as communication channels to said logical unit, wherein said information processing apparatus comprises: an error detection section which detects an error occurred on a path according to a result of a data input/output request; a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and a changeover section which uses a determination results from said changeover evaluation section to change said information processing apparatus requesting data/output from said logical unit. Under an additional aspect, the error detection section may specify a type of said detected error; and said server changeover evaluation section changes the number of paths as criterion for changing said information processing apparatus according to said specified error type.

The search of the above features was conducted in the following areas:

Class	Subclass
707	202
710	8, 11, 14, 30, 38, 51, 305
711	111-114
714	1, 2, 6, 21, 25, 56

Additionally, a computer database search was conducted on the USPTO system EAST.

(D) The following is a list of the references deemed most closely related to the subject matter encompassed by the claims:

U.S. Patent Number	Inventors
5,404,487	Murata et al.
6,145,024	Maezawa et al.
6,606,630	Gunlock

U.S. Patent Publication No.	Inventor(s)
2004/0037277	Mathews et al.
2005/0097243	Yamashita et al.

A copy of each of these references (as well as other references uncovered during the search) is enclosed in an accompanying IDS.

(E) It is submitted that the present invention is patentable over the references for the following reasons.

It is submitted that the cited references, whether taken individually or in combination with each other, fail to teach or suggest the invention as claimed. In particular, the cited references, at a minimum, fail to teach or suggest in combination with the other limitations recited in the claims:

a first feature of the present invention as recited in independent claim 1 including a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and a changeover section which uses a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output from said logical unit;

a second feature of the present invention as recited in independent claim 9 including an error management section which detects an error occurred on said path, specifies a type of said error, and totals the number of detected errors for each path and error type; a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and a changeover section which uses a determination result from said changeover evaluation section to change

said information processing apparatus requesting data input/output from said logical unit;

a third feature of the present invention as recited in independent claim 10 including a changeover evaluation section which detects occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and a changeover section which uses a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output from said logical unit;

a fourth feature of the present invention as recited in independent claim 14 including detecting occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and using a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output from said logical unit;

a fifth feature of the present invention as recited in independent claim 18 including determining whether or not the number of detected errors exceeds a specified criterion for each path; specifying an error-prone path based on a result of comparing said number of detected errors with said specified criterion; and issuing a command to change said information processing apparatus based on a result of comparing said number of specified error-prone paths with a specified threshold; and

a sixth feature of the present invention as recited in independent claim 19 wherein means for detecting occurrence of error on a specified number of paths to determine whether or not to change an information processing apparatus connected to said storage even before occurrence of errors on all paths; and means for using a determination result from said changeover evaluation section to change said information processing apparatus requesting data input/output from said logical unit.

To the extent applicable to the present Petition, Applicants submit that although the distinguishing feature(s) may represent a substantial portion of the claimed invention, the claimed invention including said feature(s) and their inter-operation provides a novel storage system and system and method related to or implemented in or by said storage system not taught or suggested by any of the references of record.

The references considered most closely related to the claimed invention are briefly discussed below:

U.S. Patent No. 5,404,487 (Murata et al.) discloses a disc controller 110 that controls a plurality of storage paths 100-103 which act as data transfer paths between a cache 105, channels and discs 90-93. An error that occurs on storage paths 100-103 is detected. A channel control unit 111 includes eight channels a-h for accessing to the discs 90-93. The connections between eight channels a-h and the four storage paths 100-103 are controlled by a Multi-Path switching device 100 in a dynamic switching manner. A Storage Path (SP) STATUS table 260 sets a value "1" when the storage path SP can access a

cache 105 and a value "0" when the storage path SP cannot. A process sets a factor of error in a storage path (block 319, block 600-figure 7). A determination step (block 305) determines whether the access may be executed. (See, e.g., Abstract; column 1, lines 35-56; column 3, lines 58-68; column 4, lines 1-20; column 6, lines 58-68; column 7, lines 1-13; column 8, lines 15-34; column 9, lines 15-29; column 10, lines 58-68; column 11, lines 1-4; column 13, lines 29-46 and lines 62-68; and Figures 1-3, 7, and 14.) However, unlike the present invention, Murata et al. does not disclose that an error detection section specifies a type of detected error. Furthermore, Murata et al. does not disclose that a server changeover evaluation section changes the number of paths as criterion for changing said information processing apparatus according to said specified error type. More particularly, Murata et al. does not disclose or suggest the above described first feature of the present invention as recited in independent claim 1, the above described second feature of the present invention as recited in independent claim 9, the above described third feature of the present invention as recited in independent claim 10, the above described fourth feature of the present invention as recited in independent claim 14, the above described fifth feature of the present invention as recited in independent claim 18 and the above described sixth feature of the present invention as recited in independent claim 19, in combination with the other limitations recited in each of the independent claims.

U.S. Patent No. 6,145,024 (Maezawa et al.) discloses a switching device 7 connecting to a host computer via channel paths 2 (with links 20) and

connecting to input/output devices 4, 4' (via links 20). A link connection control circuit 38 detects connection information corresponding to each channel path. The detection of a connection error (frame validity error) is managed for each channel separately to carry out a recovery processing so other channels can continue operation. The link error detector circuit recognizes a link error on all of the channels. The switching device 7 can transfer data from one of the links 21 to another through one or more internal logical paths (plural multiplexer ports.) (See e.g., Abstract; column 8, lines 41-58; column 9, lines 47-62; column 10, lines 1-4; column 6, lines 44-59; column 14, lines 36-47; column 18, lines 31-49 and lines 63-67; column 19, lines 3-17; column 20, lines 44-59; and Figures 1-2.) However, unlike the present invention, Maezawa et al. does not disclose a changeover section which uses a determination results from said changeover evaluation section to change said information processing apparatus requesting data/output from said logical unit. More particularly, Maezawa et al. does not disclose or suggest the above described first feature of the present invention as recited in independent claim 1, the above described second feature of the present invention as recited in independent claim 9, the above described third feature of the present invention as recited in independent claim 10, the above described fourth feature of the present invention as recited in independent claim 14, the above described fifth feature of the present invention as recited in independent claim 18 and the above described sixth feature of the present invention as recited in independent claim 19, in combination with the other limitations recited in each of the independent claims.

U.S. Patent No. 6,606,630 (Gunlock) discloses switches 110 connected between computers 100, 130 and target storage nodes 126-128. A path status 806 includes information such as failure flags. An error is detected at step 1300. The switches 110 provide an alternate path when the system recognizes failure of a path. (See e.g., Abstract; column 3, lines 23-29; column 6, lines 17-26; column 8, lines 61-64; column 12, lines 10-51; and Figures 1-3.) However, unlike the present invention, Gunlock does not disclose a changeover section which uses a determination results from said changeover evaluation section to change said information processing apparatus requesting data/output from said logical unit. More particularly, Gunlock does not disclose or suggest the above described first feature of the present invention as recited in independent claim 1, the above described second feature of the present invention as recited in independent claim 9, the above described third feature of the present invention as recited in independent claim 10, the above described fourth feature of the present invention as recited in independent claim 14, the above described fifth feature of the present invention as recited in independent claim 18 and the above described sixth feature of the present invention as recited in independent claim 19, in combination with the other limitations recited in each of the independent claims.

U.S. Patent Publication No. 2004/0037277 (Mathews et al.) discloses Switching Fabric Modules 130-1 to 130-N connected between Packet Processor Modules 101-1 to 101-N and Packet Processor Module 162-1 to 162-N. Fabric diagnostics modules 234-1 to 234-N are provided for diagnosing the path (steps

404, 405, 615, 616, 618). Switching Fabric Modules 130-1 to 130-N then flush defective paths (step 407). (See, e.g., Abstract; paragraphs 4, 15, 17-19, 22, 34, 38-39, 42, and 45; and Figures 1-2, and 4A.) However, unlike the present invention, Mathews et al. does not disclose a changeover section which uses a determination results from said changeover evaluation section to change said information processing apparatus requesting data/output from said logical unit. More particularly, Mathews et al. does not disclose or suggest the above described first feature of the present invention as recited in independent claim 1, the above described second feature of the present invention as recited in independent claim 9, the above described third feature of the present invention as recited in independent claim 10, the above described fourth feature of the present invention as recited in independent claim 14, the above described fifth feature of the present invention as recited in independent claim 18 and the above described sixth feature of the present invention as recited in independent claim 19, in combination with the other limitations recited in each of the independent claims.

U.S. Patent Publication No. 2005/0097243 (Yamashita et al.) discloses that at an occurrence of path failure, an alternate path is selected for allocation according to a path control information. A parameter "number of redundant paths" indicates a specific case of parameters for path availability and specifies a number of paths for a volume allocation 51 to a host 30. A path substitution (for another path) is conducted when failure occurs or when performance is deteriorated in a path. A dynamic path switch 32 dynamically conducts a

changeover operation between paths when a failure is detected in the path, and then an alternate path is dynamically allocated. (See, e.g., Abstract; paragraphs 31, 33, 50, 124, 148, 157, 164, 170, 173, 318, 320, 321, 322, 349-350, 362-367, and 373; and Figures 1-2, and 8.) However, unlike the present invention, Yamashita et al. does not disclose that an error detection section specifies a type of said detected error. Furthermore, Yamashita et al. does not disclose a server changeover evaluation section that changes the number of paths as criterion for changing said information processing apparatus according to said specified error type. More particularly, Yamashita et al. does not disclose or suggest the above described first feature of the present invention as recited in independent claim 1, the above described second feature of the present invention as recited in independent claim 9, the above described third feature of the present invention as recited in independent claim 10, the above described fourth feature of the present invention as recited in independent claim 14, the above described fifth feature of the present invention as recited in independent claim 18 and the above described sixth feature of the present invention as recited in independent claim 19, in combination with the other limitations recited in each of the independent claims.

Therefore, since the cited references fail to disclose or suggest the above described first feature of the present invention as recited in independent claim 1, the above described second feature of the present invention as recited in independent claim 9, the above described third feature of the present invention

as recited in independent claim 10, the above described fourth feature of the present invention as recited in independent claim 14, the above described fifth feature of the present invention as recited in independent claim 18 and the above described sixth feature of the present invention as recited in independent claim 19, in combination with the other limitations recited in each of the independent claims, it is submitted that all of the claims are patentable over the cited references whether said references are taken individually or in combination with each other.

F. Conclusion

Applicant has conducted what it believes to be a reasonable search, but makes no representation that "better" or more relevant prior art does not exist. The United States Patent and Trademark Office is urged to conduct its own complete search of the prior art, and to thoroughly examine this application in view of the prior art cited herein and any other prior art that the United States Patent and Trademark Office may locate in its own independent search. Further, while Applicant has identified in good faith certain portions of each of the references listed herein in order to provide the requisite detailed discussion of how the claimed subject matter is patentable over the references, the United States Patent and Trademark Office should not limit its review to the identified portions but rather, is urged to review and consider the entirety of each reference, and not to rely solely on the identified portions when examining this application.

In view of the foregoing, Applicant requests that this Petition to Make Special be granted and that the application undergo the accelerated examination procedure set forth in MPEP 708.02 VIII.

G. Fee (37 C.F.R. 1.17(h))

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[X] the Credit Card Payment Form (attached) for $130.00.

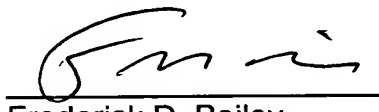
[ ] charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (Atty. Docket No. 1213.43684X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.



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